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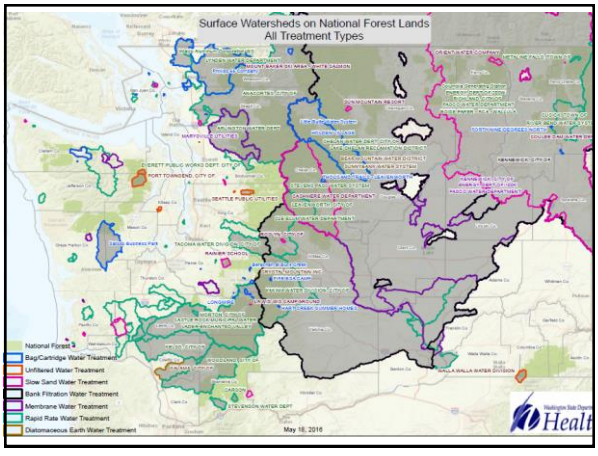
01
Why Source Water Protection & Restoration



WAC 246 - 290: Drinking water supply systems using a surface water source must develop and implement a watershed control plan in order to protect the water supply and the health of the water system customers.

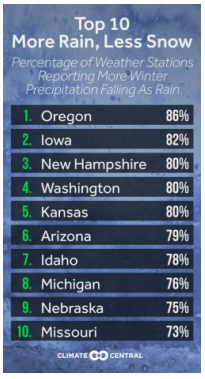
Source water protection is the first line of defense in a multi-barrier approach

– that includes robust treatment, monitoring, and a secure delivery system –

to ensuring safe drinking water for people.

Risk prevention and mitigation

- Cost-effective way to reduce water treatment and storage costs.
- Important complement to more expensive, engineered options, aka "gray" infrastructure.
- First line of defense to protecting public health.
- Compliance with regulatory standards or to pre-empt regulation



Less snow, more rain, especially at lower elevations.

% of stations showing a trend toward a lower percentage of winter precipitation falling as snow over the 65 year study period:

- **Under 2,000 feet: 81 % in WA**
- **At 2,000 to 5,000 feet: 63% in Washington**

Source: Brady & Sanford, April 2016, "Meltdown: Increasing rain as a percentage of total winter precipitation"

Hotter Years, More Fires

Gray + Green Infrastructure

Investing in healthy, well-managed watersheds is a cost-effective way to reduce water treatment and storage costs

02 *Watershed Enhancement Strategies*

Strategies for watershed restoration and protection

- Regulations
- Land acquisition or easements
- Collaborative management and agreements with landowners
- Watershed planning and emergency response
- Best management practices (land use: ag, forestry, etc)
- Stream and upland restoration

Examples of watershed enhancement projects

- Culvert removal and traditional culvert replacement with streambed simulation type culverts or bridges
- Addition of road drainage culverts to route road runoff
- Removal of dams or other large obstructions (not for permitting); breaching or removal of levees and tide gates
- Road decommissioning, road modification, storm-proofing
- Reestablishing river flow patterns, meanders, and channels that have been previously altered
- Restoring stream complexity and roughness, increasing streamflow travel times
- Reducing pesticide application rates and loadings in source area
- Installation of fencing
- Reforestation or replanting
- Development of educational flyers/brochures for purposes of public education
- Implementation of educational outreach projects emphasizing watershed resource conservation
- Planning and preparation for the purchase of lands within the drinking water source area
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- Installation of signs at boundaries of zones or protection areas
- Development of an Ecosystem Services project in watershed to fund preservation areas

Photo credit: U of Oregon Libraries

Relationship between treatment plant operations & watershed health

Every treatment plant has a limit of turbidity it can treat:

- Slow sand - 10 NTU with roughing filter.
- Contact adsorption clarifier & filtration - 30 NTU.
- Membranes - 80 to 100 NTU.

Reduce turbidity through watershed restoration

(Before the project) Perched culvert on South Fork Ferguson Creek that created a barrier to juvenile cutthroat trout. The culvert's diameter is much smaller than the stream's winter width, causing high water velocities below the outlet.

After the project: South Fork Ferguson Creek flowing through the new stream simulation, pipe arch culvert. The crossing was rip-rapped with rocks to minimize erosion from the road into the stream.

E.g. Fixing stream crossings, culverts, roads can address chronic erosion problems + mitigate risk for episodic erosion via fill/failure.

Boistfort Valley Water

- BVW has invested over one million dollars in constructing presedimentation facilities.
- Wildwood WTP still periodically shut down due to high turbidity.
- CAC/filter plant difficult to operate, if influent turbidity exceeds 30 NTU.

Boistfort Valley Water (cont.)

Boistfort Valley Water (cont.)

Boistfort Valley Water (cont.)

03 *Getting help (part 1)*
On-the-ground partners

Who can help

- Soil & Water Conservation District
- Watershed council
- Salmon recovery organizations
- NGO/grassroot groups: e.g., watershed councils, land trusts, fish or wildlife conservation groups
- Agencies

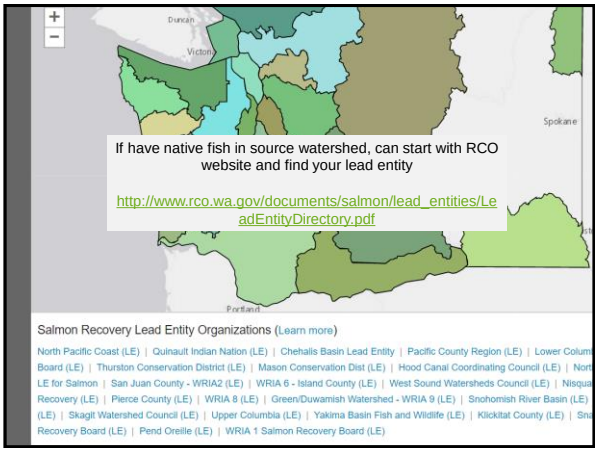
How they can help.

- Identify and prioritize restoration/conservation actions
- Coordinate design, implementation, permitting, reporting, monitoring
- Conduct community outreach and planning
- Raise money
- Manage subcontracts

Example of project + partners

CCNRD Lower Icicle Riparian Initiative

PROJECT CONTACT
•Chelan County Natural Resource
LAND OWNER
•Leavenworth Golf Course
•Pat Fromm
PARTNER
•Chelan/Douglas Land Trust
•Trout Unlimited



Davis Creek, after restoration

TECHNICAL COMMITTEE (*continued from previous page*)

Jamie Glasgow
Wild Fish Conservancy
Gavin Glore
Mason Conservation District
Chanele Holbrook
Heernett Environmental Foundation
Bob Metzger
U.S. Forest Service
Mike Nordin
Grays Harbor Conservation District
Miranda Plumb
U.S. Fish and Wildlife Service
Margaret Rader
Chehalis River Council
David Rountry
Washington Department of Ecology
Janet Strong
Chehalis River Basin Land Trust
Ann Weckback
Lewis County
Mark White
Confederated Tribes of the Chehalis Reservation

PAST AND CURRENT PROJECT SPONSORS

Capitol Land Trust
Chehalis Basin Fisheries Task Force
Chehalis River Basin Land Trust
City of Centralia

04 *Getting help (part 2)*
Financing

Sample Financing Mechanisms

- Utility rates
- Taxes
- Bond funds
- State Revolving Funds (grant and loan financing)
- Private foundations, PRIs
- Diversify revenue streams through asset management (i.e., if town/district owns forestland):
  - Carbon credits
  - Timber
  - Water quality trading market
  - Leasing in-stream water rights

Grants

- USDA Rural Development
- WA Department of Ecology Water Quality
- WA State Recreation and Conservation Office
- WA Department of Fish and Wildlife
- NOAA Fisheries
- Private foundations

WA DOH

Source Water Protection Grants
- Up to $30,000 per eligible study

Examples
- Boistfort
- Carbonado
- Skagit PUD

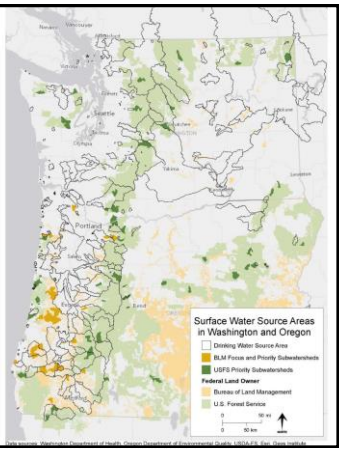
Pacific Northwest Drinking Water Providers Partnership

Drinking Water Providers Partnership

- Restore and protect the health of watersheds which communities depend upon for drinking water while also benefiting aquatic and riparian ecosystems, including the native fish that inhabit them.
- Support local partnerships between downstream drinking water providers and upstream landowners and restoration practitioners.

About DWPP Grants

- For projects located in a public drinking water watershed in the state of Oregon or Washington which will benefit native fish and drinking water.
- Grants of up to $50,000
- Next RFP coming in November
- Federal $ can go to most any organization



Examples of eligible DWPP projects

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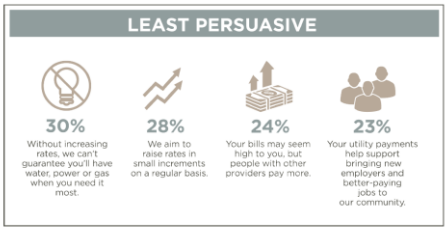
Photo courtesy of Umpqua NF

05 *Communicating the value to constituents*

RATE CASE MESSAGES

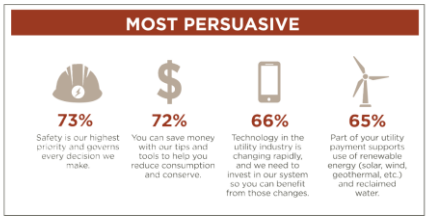
Least Persuasive



See full survey findings and report at hahnpublic.com/utilities

RATE CASE MESSAGES

Most Persuasive



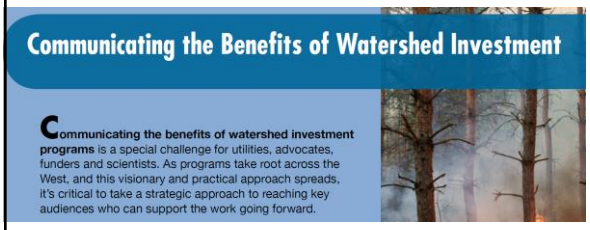
See full survey findings and report at hahnpublic.com/utilities

What makes a message…

Most Persuasive	*Least Persuasive*
– Safety – Saving $$ – Environmental sustainability – Innovation – Commitment to high standards of service and customer satisfaction	– Comparisons to other utilities/cities/communities – Resources directed towards non-utility purposes – Attracting new businesses and job growth

See full survey findings and report at hahnpublic.com/utilities

Sample primer –
help in developing your audience, messaging, etc.



http://www.carpediemwest.org/wp-content/uploads/Communicating-the-Benefits-of-Watershed-Investment-WIN-Primer.pdf

Thank You

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